

DETECTION OF BASE CONTAMINANTS IN GAS SAMPLES

ABSTRACT OF THE DISCLOSURE

A detection system for detecting contaminant gases includes a converter, a detector, a primary channel for delivering a target gas sample through the converter to the detector, and at least two scrubbing channels for delivering a reference gas sample through the converter to the detector. Each of the scrubbing channels includes a scrubber for removing basic nitrogen compounds from the reference gas sample, while the primary channel preferably transmits the target gas sample without scrubbing. The converter converts gaseous nitrogen compounds in the target gas sample to an indicator gas, such as nitric oxide (NO), and a control system directs the flow of a gas sample among the primary channel and the scrubbing channels. In accordance with one aspect of the invention, the basic-nitrogen-compound concentration can be measured by comparing the concentration of the indicator gas detected in the reference sample with the detected indicator-gas concentration in the target sample. The use of multiple scrubbing channels enables the detection to operate continuously since each scrubber can be alternately purged while another is scrubbing.